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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/913,986	08/16/2001	Peter Dress	AZ.2796	8337

30996 7590 08/14/2002

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EXAMINER

MOORE, KARLA A

ART UNIT PAPER NUMBER

1763

DATE MAILED: 08/14/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/913,986

Applicant(s)

DRESS ET AL.

Examiner

Karla Moore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-57 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 30-32, 35-42, 44, 45, 47-53 and 56 is/are rejected.
- 7) ☒ Claim(s) 33, 34, 43, 46, 54, 55 and 57 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08/16/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
- 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
- 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 30-31, 39-42, 45, 47-49 and 51-52 and 56 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,033,135 to An et al.

3. An et al. disclose an apparatus for coating substrates in Figure 12, comprising: a substrate holder (10, 95) for holding thereon a substrate (W) in such a way that a surface of the substrate that is to be coated is exposed and is directed downwardly; a means for rotating said substrate holder (column 5, rows 5-7); and a cover (70) that is securable to said substrate holder, wherein said cover, together with said substrate holder, are adapted to form a sealed chamber for receiving the substrate. The substrate holder and cover have side walls that meet on either side near the mid-portion of the chamber.

4. An et al. further provide a holding mechanism on said substrate holder for holding the substrate by means of vacuum (column 4, rows 61-67).

5. With respect to claim 39, said cover is symmetrical relative to a central axis c thereof.

6. With respect to claims 40-42, a notch (70b) is provided in an outer region of a portion of said cover that defines said chamber. Said notch tapers outwardly and is inclined on a side thereof that faces said substrate holder.

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7. In Figure 4, An et al. provide a receiver (40) for supporting said cover.

8. With respect to claims 47-49, a rinsing and/or drying device (column 8, rows 8-11) is provided for said cover. Said rinsing and/or drying device is part of said receiver and is provided with at least one nozzle (figure 14a and 14b, 96) that is directed against at least one of said cover and said notch, wherein said nozzle is adapted to be supplied with a rinsing and/or drying fluid.

9. With respect to claims 51 and 52, in addition to the disclosed apparatus, An et al. further teach a method for coating substrates, including the steps of: holding a substrate on a holder in such a way that a surface of the substrate that is to be coated is exposed and is directed downwardly; securing to said substrate holder a cover that together with said substrate holder forms a sealed chamber for receiving said substrate; and rotating the substrate together with said substrate holder, where in said substrate is held or secured on said holder by means of vacuum.

10. With respect to claim 56, also included in the method is conveying a rinsing and/or drying fluid against said cover by means of at least one nozzle.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,033,135 to An et al in view of U.S. Patent No. 6,156,125 to Harada.

13. An et al. disclose the invention substantially as claimed.

14. However, An et al. fail to disclose a holding mechanism provided on said substrate holder for holding said cover by means of vacuum or at least one sealing means provided for delimiting a vacuum region between said substrate holder and said cover.

15. Harada et al. disclose a holding mechanism (Figure 5, 75; column 5, rows 40-50) provided on said substrate holder (45, 60) for holding said cover means (31) by vacuum and at least one sealing

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means (80, 81) for the purpose of firmly putting together the cover and the holder, which negates the need for a clamp and leads to downsizing of the apparatus (column 6, rows 49-56).

16. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a vacuum sealing holding mechanism and at least one sealing means in An et al. in order to firmly put together the holder and cover as taught by Harada et al.

15. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over An et al. as applied to claims 30-31, 39-42, 45, 47-49 and 51-52 and 56 above, and further in view of U.S. Patent No. 4,503,807 to Nakayama et al

16. An et al. disclose the invention substantially as claimed.

17. However, An et al. fail to teach a substrate holder provided with a recess for an at least partial accommodation of the substrate.

18. Nakayama et al. teach the use of a recess formed in a holder for the purpose of placing a substrate within the recess for processing (column 5, rows 30-33).

19. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a recess the holder of An et al. in order to place the wafer within the recess for processing.

16. Claims 37-38 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over An et al. as applied to claims 30-31, 39-42, 45, 47-49 and 51-52 and 56 above, and further in view of U.S. Patent No. 5,656,082 to Takatsuki et al.

17. An et al. disclose the invention substantially as claimed.

18. However, An et al. fail to teach a centering mechanism, in the form of at least one slanted centering portion on at least one of said substrate holder and said cover, for a mutual centering of said cover and said substrate holder.

19. Takatsuki et al. disclose an apparatus for coating substrates in Figures 3 and 4, comprising: a slanted centering portion (28b, 29a or 33d) for a mutual centering of said cover (3) and said substrate holder (22) wherein the disclosed configuration is used for preventing the cover from striking the holder,

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thereby eliminating vibration of the parts and the formation of contaminants (column 9, rows 59-62; column 10, rows 24-32, 65-67; column 11, rows 1-13).

20. With respect to claim 53, the disclosure includes a the step of centering (mating of slanted surfaces) said cover and said substrate holder prior to holding or securement (setting of a sealing ring,9; column 10, rows 46-52).

21. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a slanted centering portion in An et al. in order to prevent the cover from striking the holder, thereby eliminating the vibration of parts and formation of contaminants as taught by Takatsuki et al.

22. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over An et al. as applied to claims 30-31, 39-42, 45, 47-49 and 51-52 and 56 above, and further in view of U.S. Patent No. 6,027,602 to Hung et al.

23. An et al. disclose the invention substantially as claimed.

24. However, An et al. fail to teach providing a device for "turning" said cover. Examiner is using a definition provided by Webster's Dictionary, where "turn" is "defined as to move around an axis or center".

25. Hung et al. disclose a substrate processing apparatus wherein the chamber (including a cover, 59) is rotated/turned with the substrate by a device (53, shaft and motor, not numbered; column 3, rows 33-39) for the purpose of creating a stable environment where processing parameters are more easily controlled (abstract).

26. It would have been obvious to one or ordinary skill in the art at the time the Applicant's invention was made to have provided a device for turning said cover in An et al. in order to create a stable environment as taught by Hung et al.

27. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over An et al.

28. Claim 49 is drawn to the composition of the rinsing fluid.

29. The courts have ruled that expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. Ex Parte Thibault, 154 USPQ 666, 667 (Bd. App. 1969).

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Allowable Subject Matter

30. Claims 33-34, 43, 46 and 54-55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

31. The prior art fails to teach or fairly suggest a substrate coating apparatus as claimed in claims 33 and 34 where holding mechanisms for a substrate and a cover are connected to a common vacuum source or adapted to be controlled independently.

32. With respect to claim 43, the prior art fails to teach or fairly suggest a cover symmetrical relative to a central plane B thereof.

33. With respect to claim 46, the prior art further fails to teach or fairly suggest a device for raising or lowering said receiver .

34. With respect to claims 54 and 55, the prior art fails to teach or fairly suggest a method for coating a substrate, wherein: after said step of rotating said substrate, the securement of said cover is released independent of the holding mechanism or wherein, during said step of rotating said substrate a side of said cover that faces away from the substrate is rinsed and/or dried.

Conclusion

35. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 703.305.3142. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703.308.1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9310 for regular communications and 703.872.9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.0661.

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August 12, 2002



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